

## **AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

### **LISTING OF CLAIMS:**

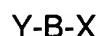
Claims 1-21. (cancelled).

22. (currently amended): A cross-linked polymer formed by

a) radical polymerisation of radical polymerisable monomers

including

i) a zwitterionic monomer having the formula:

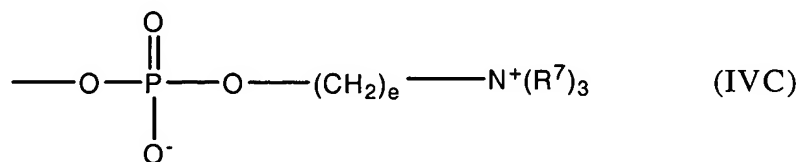


wherein

B is a straight or branched alkylene, oxaalkylene or oligo-oxaalkylene chain optionally containing one or more fluorine atoms up to and including perfluorinated chains, or if X contains a carbon-carbon chain between B and the centre of permanent position charge or if Y contains a terminal carbon atom bonded to B, a valence bond;

X is a zwitterionic group selected from groups, IVC, IVD and IVF in which

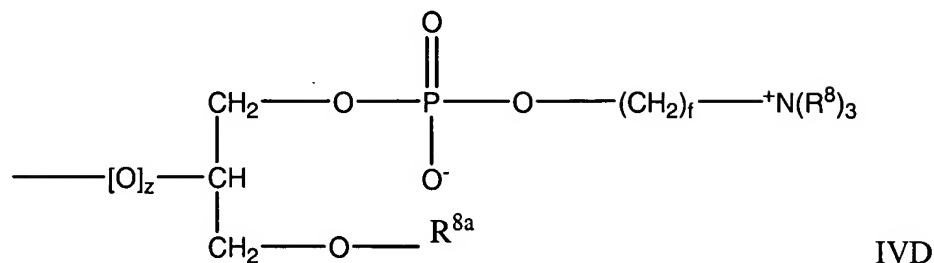
group IVC has the formula



where

the groups  $\text{R}^7$  are the same or different and each is hydrogen or  $\text{C}_{1-4}$  alkyl, and e is ~~from~~ from 1 to 4;

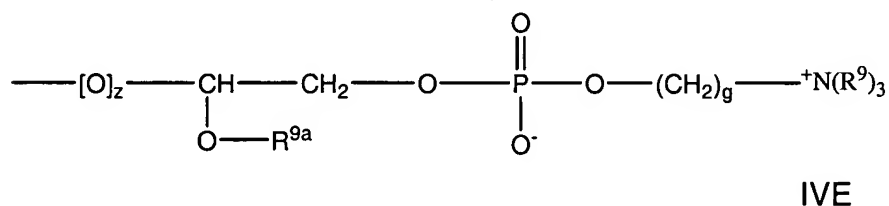
group IVD has the formula



wherein

the groups  $\text{R}^8$  are the same or different and each is hydrogen or  $\text{C}_{1-4}$  alkyl,  $\text{R}^{8a}$  is hydrogen or a group  $\text{---C(O)B}^1\text{R}^{8b}$  wherein  $\text{R}^{8b}$  is hydrogen or methyl,  $\text{B}^1$  is a valence bond or straight or branched alkylene, oxaalkylene or olig-oxaalkylene group, and  $f$  is from 1 to 4; and if  $\text{B}$  is other than a valence bond  $z$  is 1 and if  $\text{B}$  is a valence bond  $z$  is 0, if  $\text{X}$  is directly bonded to an oxygen or nitrogen atom and otherwise  $z$  is 1;

group IVE has the formula



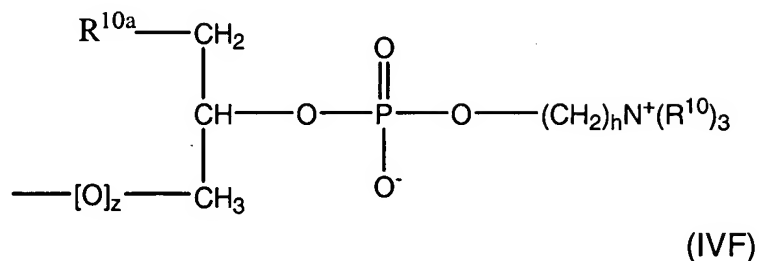
wherein

the groups  $\text{R}^9$  are the same or different and each is hydrogen or  $\text{C}_1\text{---C}_4$  alkyl,  $\text{R}^{9a}$  is hydrogen or a group,  $\text{---C(O)B}^2\text{R}^{9b}$  wherein  $\text{R}^{9b}$  is hydrogen or methyl,  $\text{B}^2$  is a valence bond or a straight or branched alkylene, oxaalkylene or olig-oxaalkylene or olig-oxaalkylene group, and  $g$  is from 1 to 4; and

if  $\text{B}$  is other than a valence bond  $z$  is 1 and if  $\text{B}$  is a valence bond  $z$  is 0 if  $\text{X}$  is directly bonded to an oxygen or nitrogen atom and otherwise  $z$  is 1;

and

group IVF has the formula

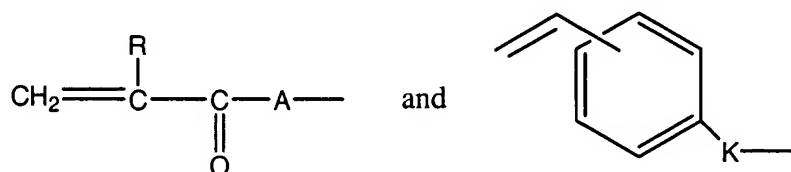


wherein

the groups  $\text{R}^{10}$  are the same or different and each is hydrogen or  $\text{C}_{1-4}$  alkyl,  $\text{R}^{10a}$  is hydrogen or a  $-\text{C}(\text{O})\text{B}^3\text{R}^{10b}$  group wherein  $\text{R}^{10b}$  is hydrogen or methyl,  $\text{B}^3$  is a valence bond or a straight or branched alkylene, oxaalkylene or oligo-oxaalkylene group, and  $h$  is from 1 to 4; and

if  $\text{B}$  is other than a valence bond  $z$  is 1 and if  $\text{B}$  is a valence bond  $z$  is 0  
 if  $\text{X}$  is directly bonded to the oxygen or nitrogen and otherwise  $z$  is 1 and;

$\text{Y}$  is an ethylenically unsaturated polymerisable group selected from



wherein:

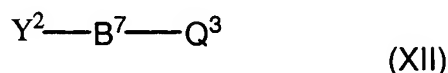
$\text{R}$  is hydrogen or a  $\text{C}_1\text{-C}_4$  alkyl group;

$\text{A}$  is  $-\text{O}-$  or  $-\text{NR}^1$  where  $\text{R}^1$  is hydrogen or a  $\text{C}_1\text{-C}_4$  alkyl group or  $\text{R}^1$  is  $-\text{B-X}$  where  $\text{B}$  and  $\text{X}$  are as defined above; and

$\text{K}^2$  is a group  $-(\text{CH}_2)_p\text{OC}(\text{O})-$ ,  $-(\text{CH}_2)_p\text{C}(\text{O})\text{O}-$ ,  $-(\text{CH}_2)_p\text{OC}(\text{O})\text{O}-$ ,  $-(\text{CH}_2)_p\text{NR}^2-$ ,  $-(\text{CH}_2)_p\text{NR}^2\text{C}(\text{O})-$ ,  $-(\text{CH}_2)_p\text{C}(\text{O})\text{NR}^2-$ ,  $-(\text{CH}_2)_p\text{NR}^2\text{C}(\text{O})-$ ,  $-(\text{CH}_2)_p\text{OC}(\text{O})\text{NR}^2-$ ,  $-(\text{CH}_2)_p\text{NR}^2\text{C}(\text{O})\text{NR}^2-$ , (in which the groups  $\text{R}^2$  are the same or different)

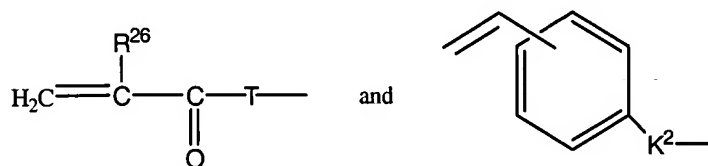
$-(\text{CH}_2)_p\text{O}$ ,  $-(\text{CH}_2)_p\text{SO}_3^-$ , or, optionally in combination with  $\text{B}$ , a valence bond and  $p$  is from 1 to 12 and  $\text{R}^2$  is hydrogen or a  $\text{C}_1\text{-C}_4$  alkyl group and

- ii) a monomer having a reactive group of the formula general formula (XII)



where

$Y^2$  is an ethylenically unsaturated polymerisable group selected from



where

$R^{26}$  is hydrogen or  $C_1$ - $C_4$  alkyl;

T is -O- or  $NR^{27}$  or , wherein  $R^{27}$  is hydrogen or a  $C_1$ - $C_4$  alkyl group or  $R^{27}$  is a  $-B^7Q_3$  group ;

$B^7$  is a valence bond a straight or branched alkylene oxaalkylene or oligo-oxaalkylene group;

$K^2$  is a group -  $(CH_2)_qOC(O)-$ ,  $-(CH_2)_qC(O)O-$ ,  $-(CH_2)_qOC(O)O-$ , -  $(CH_2)_qNR^{20}-$ ,  $-(CH_2)_qNR^{20}C(O)O-$ ,  $-(CH_2)_qC(O)NR^{20}-$ ,  $-(CH_2)_qNR^{20}C(O)O-$ , -  $(CH_2)_qOC(O)NR^{20}-$ ,  $-(CH_2)_qNR^{20}C(O)NR^{20}-$  (in which the groups  $R^{20}$  are the same or different),  $-(CH_2)_qO-$  or  $-(CH_2)_qSO_3-$  or , or a valence bond and q is from 1 to 12 and  $R^{20}$  is hydrogen or  $C_1$ - $C_4$  alkyl group; and

$Q^3$  is a reactive group selected from the groups consisting of aldehyde groups; silane and siloxane groups containing one or more substituents selected from halogen atoms and  $C_{1-4}$  -alkoxy groups; hydroxyl; amino; carboxyl; epoxy;  $-CHOHCH_2Hal$  (in which Hal is selected from chlorine, bromine and iodine atoms); succinimido; tosylate; triflate; imidazole carbonylamino; optionally substituted triazine groups; cinnamyl; ethylenically and acetylenically unsaturated groups; acetoacetoxyl; methylol; and chloroalkylsulphone groups; and

b) cross-linking the polymer by forming cross-linkages between groups  $Q^3$  derived from the said monomer having a reactive group.

23. (previously presented): A polymer according to claim 22 in which  $Q^3$  is selected from the group consisting of aldehyde, silane and siloxane groups containing one or more substituents selected from halogen atoms and  $C_{1-4}$  alkoxy groups, amino, epoxy,  $CHOHCH_2Hal$  (in which Hal is halogen), succinimido, tosylate, triflate, imidazolecarbonyl amino and optionally substituted triazine groups.

24. (previously presented): A polymer according to claim 22 in which the group  $Q^3$  is selected from the group consisting of amino, acetylenically unsaturated hydrocarbon groups, 3-chloro-2-hydroxypropyl and 3-trimethoxy silyl propyl.

25. (previously presented): A polymer according to claim 22 in which the said monomer having a reactive group is selected from the group consisting of 2-aminoethylmethacrylate, 7-dodecynmethacrylate, 3-chloro-2-hydroxypropylmethacrylate and 3-(trimethoxysilyl) propylmethacrylate.

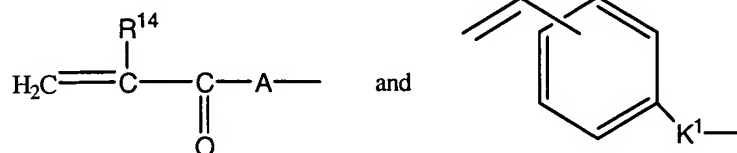
26. (previously presented): A polymer according to claim 22 in which said radical polymerisable monomers include a comonomer having the general formula (VI)



(VI)

where

$Y^1$  is an ethylenically unsaturated polymerisable group selected from



where

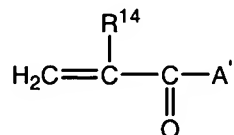
$R^{14}$  is hydrogen or  $C_1$ - $C_4$  alkyl,

$A'$  is  $-O-$  or  $-NR^{15}-$  where  $R^{15}$  is hydrogen or a  $C_1$ - $C_4$  alkyl group or  $R^{15}$  is a group Q;

$K^1$  is a group  $-(CH_2)_lOC(O)-$ ,  $-(CH_2)_lC(O)O-$ ,  $-(CH_2)_lOC(O)O-$ ,  $-(CH_2)_lNR^{16}-$ ,  $-(CH_2)_lNR^{16}C(O)-$ ,  $-(CH_2)_lC(O)NR^{16}-$ ,  $-(CH_2)_lNR^{16}CH(O)O-$ ,  $-(CH_2)_lOC(O)NR^{16}-$ ,  $-(CH_2)_lNR^{16}C(O)NR^{16}-$  (in which the groups  $R^{16}$  are the same or different),  $-(CH_2)_lO-$ ,  $-(CH_2)_lSO_3$ , a valence bond and  $l$  is from 1 to 12 and  $R^{16}$  is hydrogen or a  $C_1$ - $C_4$  alkyl group; and

$Q$  is selected from the group consisting of straight and branched alkyl, alkoxyalkyl and (oligo-alkoxy)alkyl groups containing 6 to 24 carbon atom, any of which groups is unsubstituted or substituted by one or more fluorine atoms and optionally contains one or more carbon-carbon double or triple bonds; and siloxane groups  $(CR^{16a})_{qq}(SiR^{16b})_2(OSiR^{16b})_{pp}R^{16b}$  in which each group  $R^{16a}$  is the same or different and is selected from the group consisting of hydrogen, alkyl groups of 1 to 4 carbon atoms and aralkyl groups, each group  $R^{16b}$  is alkyl of 1 to 4 carbon atoms,  $qq$  is from 1 to 6 and  $pp$  is from 0 to 49.

27. (previously presented): A polymer according to claim 26 in which  $Y^1$  is



in which

$R^{14}$  is methyl;

$A'$  is  $-O-$ ; and

$Q$  is an alkyl group of the formula  $-(CR^{17})_mCR^{17}$  wherein the groups  $-(CR^{17})-$  are the same or different and in each group  $-(CR^{17})-$  the groups  $R^{17}$  are the same or different and each group  $R^{17}$  is selected from the group

consisting of hydrogen, C<sub>1-4</sub> -alkyl and -fluoroalkyl and fluorine and m is in the range 5 to 23.

28. (previously presented): A polymer according to claim 27 in which the said comonomer is selected from the group consisting of n-dodecyl methacrylate, octadecyl methacrylate, hexadecylmethacrylate, 1H, 1H, 2H, 2H-heptadecafluorodecylmethacrylate, p-octyl styrene, p-dodecyl styrene and monomethacryloyloxypropyl terminated siloxanes.

29. (previously presented): A polymer according to claim 28 in which the said comonomer is dodecyl methacrylate.

30. (previously presented): A polymer according to claim 22 in which the said radical polymerisable monomers include a diluent monomer selected from the group consisting of C<sub>1-4</sub> -alkyl(alk)acrylates, N, N-dialkylamino alkyl(alk)acrylates containing 1 to 4 carbon atoms in each N-alkyl group and 1 to 4 carbon atoms in the alkylene group, C<sub>1-4</sub> alkyl(alk)acrylamide, hydroxy C<sub>1-4</sub> -alkyl(alk)acrylate, N-vinyl lactam having 5-7 atoms in the lactam ring, styrene, derivatives of styrene having ring substituents selected from C<sub>1-4</sub> alkyl groups and halogen atoms, polyhydroxyl (alk)acrylates, alkenes, butadiene, maleic anhydride and acrylonitrile.

31. (previously presented): A polymer according to claim 30 in which the diluent monomer is selected from hydroxy C<sub>1-4</sub> -alkyl(alk)acrylates and polyhydroxyl(alk)acrylates.

32. (previously presented): A polymer according to claim 22 in which the said radical polymerisable monomers include at least 5% by weight zwitterionic monomer and at least 0.1% by weight monomer having a reactive group.

33. (previously presented): A polymer according to claim 22 in which the said radical polymerisable monomers include at least 5% by weight zwitterionic monomer and 0.1% to 20% by weight monomer having a reactive group.

34. (previously presented): A polymer according to claim 30 in which the said radical zwitterionic monomers include at least 5% by weight, at least 0.1% by weight monomer having a reactive group and 5 to 20% by weight diluent monomer.

35. (previously presented): A polymer according to claim 26 in which the said radical polymerisable monomers include at least 5% by weight zwitterionic monomer, at least 0.1% by weight monomer having a reactive group and 5 to 90% by weight of said comonomer.

36. (previously presented): A polymer according to claim 22 in which said cross-linkage is by direct reaction of groups  $Q^3$  with one another.

37. (currently amended): A polymer according to claim 22 in which said cross-linkage is by ~~reaction~~reaction of groups  $Q^3$  with a reactive bridging molecule.

38. (currently amended): A process in which a cross-linkable polymer is cross-linked by forming cross-linkages between reactive groups  $Q^5$  on the polymer wherein the cross-linkable polymer is formed by

a) radical polymerisation of radical polymerisable monomers including

i) a zwitterionic monomer having the formula:



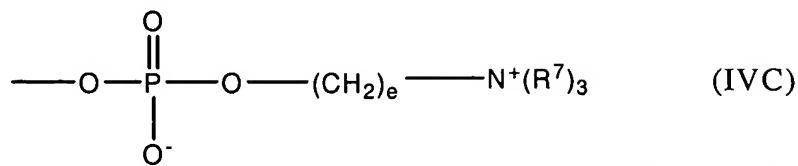
wherein

B is a straight or branched alkylene, oxaalkylene or oligo-oxaalkylene chain optionally containing one or more fluorine atoms up to and including perfluorinated chains, or if X contains a carbon-carbon chain between B and the centre of permanent position charge or if Y contains a terminal carbon atom bonded to B, a valence bond;

X is a zwitterionic group selected from groups, IVC, IVD and IVF in which

group IVC has the formula

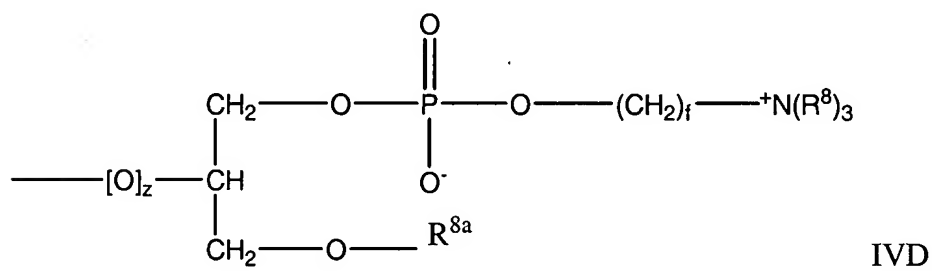




where

the groups  $\text{R}^7$  are the same or different and each is hydrogen or  $\text{C}_{1-4}$  alkyl, and  $e$  is from 1 to 4;

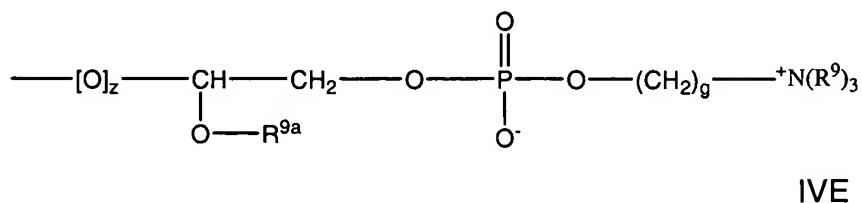
group IVD has the formula



wherein

the groups  $\text{R}^8$  are the same or different and each is hydrogen or  $\text{C}_{1-4}$  alkyl,  $\text{R}^{8a}$  is hydrogen or a  $\text{---C(O)B}^1\text{R}^{8b}$  group wherein  $\text{R}^{8b}$  is hydrogen or methyl,  $\text{B}^1$  is a valence bond or straight or branched alkylene, oxaalkylene or olig-oxaalkylene group, and  $f$  is from 1 to 4; and if  $\text{B}$  is other than a valence bond  $z$  is 1 and if  $b$  is a valence bond  $z$  is 0, if  $\text{X}$  is directly bonded to an oxygen or nitrogen atom and otherwise  $z$  is 1;

group IVE has the formula

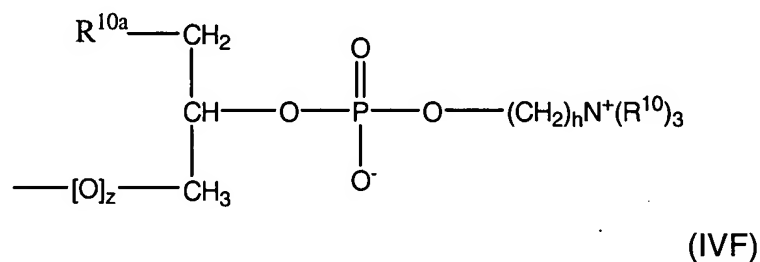


wherein

the groups  $R^9$  are the same or different and each is hydrogen or  $C_1$ - $C_4$  alkyl,  $R^{9a}$  is hydrogen or a  $-C(O)B^2R^{9b}$  group, wherein  $R^{9b}$  is hydrogen or methyl,  $B^2$  is a valence bond or a straight or branched alkylene, oxaalkylene or oligo-oxaalkylene or oligo-oxaalkylene group, and  $g$  is from 1 to 4; and

if B is other than a valence bond z is 1 and if B is a valence bond z is 0  
if X is directly bonded to an oxygen or nitrogen atom and otherwise z is 1;  
and

group IVF has the formula

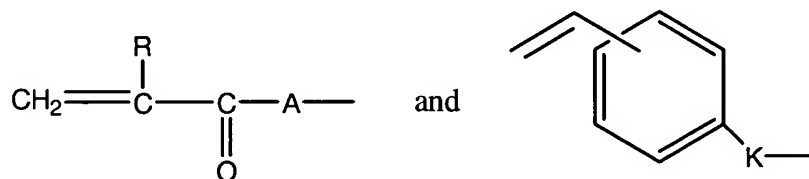


wherein

the groups R<sup>10</sup> are the same or different and each is hydrogen or C<sub>1-4</sub> alkyl, R<sup>10a</sup> is hydrogen or a —C(O)B<sup>3</sup>R<sup>10b</sup> group wherein R<sup>10b</sup> is hydrogen or methyl, B<sup>3</sup> is a valence bond or a straight or branched alkylene, oxaalkylene or oligo-oxaalkylene group, and h is from 1 to 4; and

if B is other than a valence bond z is 1 and if B is a valence bond z is 0  
if X is directly bonded to the oxygen or nitrogen and otherwise z is 1 and;

Y is an ethylenically unsaturated polymerisable group selected from

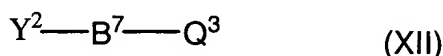


wherein:

R is hydrogen or a C<sub>1</sub>-C<sub>4</sub> alkyl group;

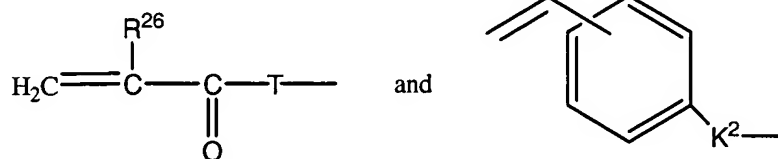
A is -O- or -NR<sup>1</sup> where R<sup>1</sup> is hydrogen or a C<sub>1</sub>-C<sub>4</sub> alkyl group or R<sup>1</sup> is -B-X where B and X are as defined above; and

$K^2$  is a group -  $(CH_2)_pOC(O)-$ , -  $(CH_2)_pC(O)O-$ , -  $(CH_2)_pOC(O)O-$ , -  $(CH_2)_pNR^{2-}$ , -  $(CH_2)_pNR^{2-}C(O)-$ , -  $(CH_2)_pC(O)NR^{2-}$ , -  $(CH_2)_pNR^{2-}C(O)-$ , -  $(CH_2)_pOC(O)NR^{2-}$ , -  $(CH_2)_pNR^{2-}C(O)NR^{2-}$ , (in which the groups  $R^2$  are the same or different)  
 -  $(CH_2)_pO$ , -  $(CH_2)_pSO_3-$ , or, optionally in combination with B, a valence bond and p is from 1 to 12 and  $R^2$  is hydrogen or a  $C_1$ - $C_4$  alkyl group and  
 ii) a monomer having a reactive group of the formula general formula (XII)



where

$Y^2$  is an ethylenically unsaturated polymerisable group selected from



where

$R^{26}$  is hydrogen or  $C_1$ - $C_4$  alkyl;

T is -O- or  $NR^{27}$  or , wherein  $R^{27}$  is hydrogen or a  $C_1$ - $C_4$  alkyl group or  $R^{27}$  is a  $-B^7Q_3$  group ;

$B^7$  is a valence bond a straight or branched alkylene oxaalkylene or oligo-oxaalkylene group;

$K^2$  is a group -  $(CH_2)_qOC(O)-$ , -  $(CH_2)_qC(O)O-$ , -  $(CH_2)_qOC(O)O-$ , -  $(CH_2)_qNR^{20-}$ , -  $(CH_2)_qNR^{20-}C(O)O-$ , -  $(CH_2)_qC(O)NR^{20-}$ , -  $(CH_2)_qNR^{20-}C(O)O-$ , -  $(CH_2)_qOC(O)NR^{20-}$ , -  $(CH_2)_qNR^{20-}C(O)NR^{20-}$  (in which the groups  $R^{20}$  are the same or different), -  $(CH_2)_qO$ - or -  $(CH_2)_qSO_3-$  or , or a valence bond and q is from 1 to 12 and  $R^{20}$  is hydrogen or  $C_1$ - $C_4$  alkyl group; and

$Q^3$  is a reactive group selected from the groups consisting of aldehyde groups; silane and siloxane groups containing one or more substituents

selected from halogen atoms and C<sub>1-4</sub> -alkoxy groups; hydroxyl; amino; carboxyl; epoxy; -CHOHCH<sub>2</sub>Hal (in which Hal is selected from chlorine, bromine and iodine atoms); succinimido; tosylate; triflate; imidazole carbonylamino; optionally substituted triazine groups; cinnamyl; ethylenically and acetylenically unsaturated groups; acetoacetoxy; methylol; and chloroalkylsulphone groups.

39. (previously presented): A process according to claim 38 in which Q<sup>3</sup> is selected from the group consisting of aldehyde, silane and siloxane groups containing one or more substituents selected from halogen atoms and C<sub>1-4</sub> alkoxy groups, amino, epoxy, CHOHCH<sub>2</sub>Hal (in which Hal is halogen), succinimido, tosylate, triflate, imidazolecarbonyl amino and optionally substituted triazine groups.

40. (previously presented): A process according to claim 38 in which the group Q<sup>3</sup> is selected from the group consisting of amino, acetylenically unsaturated hydrocarbon groups, 3-chloro-2-hydroxypropyl and 3-trimethoxy silyl propyl.

41. (previously presented): A process according to claim 38 in which the said monomer having a reactive group is selected from the group consisting of 2-aminoethylmethacrylate, 7-dodecylmethacrylate, 3-chloro-2-hydroxypropylmethacrylate and 3-(trimethoxysilyl) propylmethacrylate.

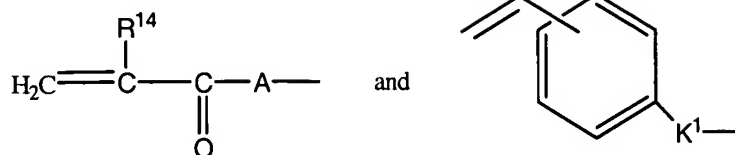
42. (previously presented): A process according claim 38 in which said radical polymerisable monomers include a comonomer having the general formula (VI).

Y<sup>1</sup>-Q

(VI)

where

Y<sup>1</sup> is an ethylenically unsaturated polymerisable group selected from



where

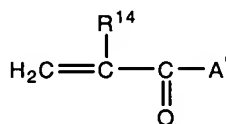
$\text{R}^{14}$  is hydrogen or  $\text{C}_1\text{-C}_4$  alkyl,

$\text{A}'$  is  $-\text{O}-$  or  $-\text{NR}^{15}-$  where  $\text{R}^{15}$  is hydrogen or a  $\text{C}_1\text{-C}_4$  alkyl group or  $\text{R}^{15}$  is a group Q;

$\text{K}^1$  is a group  $-(\text{CH}_2)_l\text{OC(O)}-$ ,  $-(\text{CH}_2)_l\text{C(O)O}-$ ,  $-(\text{CH}_2)_l\text{OC(O)O}-$ ,  $-(\text{CH}_2)_l\text{NR}^{16}-$ ,  $-(\text{CH}_2)_l\text{NR}^{16}\text{C(O)}-$ ,  $-(\text{CH}_2)_l\text{C(O)NR}^{16}-$ ,  $-(\text{CH}_2)_l\text{NR}^{16}\text{CH(O)O}-$ ,  $-(\text{CH}_2)_l\text{OC(O)NR}^{16}-$ ,  $-(\text{CH}_2)_l\text{NR}^{16}\text{C(O)NR}^{16}-$  (in which the groups  $\text{R}^{16}$  are the same or different),  $-(\text{CH}_2)_l\text{O}-$ ,  $-(\text{CH}_2)_l\text{SO}_3$ , a valence bond and  $l$  is from 1 to 12 and  $\text{R}^{16}$  is hydrogen or a  $\text{C}_1\text{-C}_4$  alkyl group; and

Q is selected from the group consisting of straight and branched alkyl, alkoxyalkyl and (oligo-alkoxy)alkyl groups containing 6 to 24 carbon atom, any of which groups is unsubstituted or substituted by one or more fluorine atoms and optionally contains one or more carbon-carbon double or triple bonds; and siloxane groups  $(\text{CR}^{16a})_{qq}(\text{SiR}^{16b})_2(\text{OSiR}^{16b})_{pp}\text{R}^{16b}$  in which each group  $\text{R}^{16a}$  is the same or different and is selected from the group consisting of hydrogen, alkyl groups of 1 to 4 carbon atoms and aralkyl groups, each group  $\text{R}^{16b}$  is alkyl of 1 to 4 carbon atoms,  $qq$  is from 1 to 6 and  $pp$  is from 0 to 49.

43. (previously presented): A process according claim 38 in which  $\text{Y}^1$  is



in which

$\text{R}^{14}$  is methyl;

$\text{A}'$  is  $-\text{O}-$ ; and

Q is an alkyl group of the formula  $-(CR^{17})_mCR^{17}$  wherein the groups  $-(CR^{17})-$  are the same or different and in each group  $-(CR^{17})-$  the groups  $R^{17}$  are the same or different and each group  $R^{17}$  is selected from the group consisting of hydrogen,  $C_{1-4}$ -alkyl and -fluoroalkyl and fluorine and m is in the range 5 to 23.

44. (previously presented): A process according to claim 43 in which the said comonomer is selected from the group consisting of n-dodecyl methacrylate, octadecyl methacrylate, hexadecylmethacrylate, 1H, 1H, 2H, 2H-heptadecafluorodecylmethacrylate, p-octyl styrene, p-dodecyl styrene and monomethacryloyloxypropyl terminated siloxanes.

45. (previously presented): A process according to claim 44 in which the said comonomer is dodecyl methacrylate.

46. (previously presented): A process according to claim 38 in which the said radical polymerisable monomers include a diluent monomer selected from the group consisting of  $C_{1-4}$ -alkyl(alk)acrylates, N, N-dialkylamino alkyl(alk)acrylates containing 1 to 4 carbon atoms in each N-alkyl group and 1 to 4 carbon atoms in the alkylene group,  $C_{1-4}$  alkyl(alk)acrylamide, hydroxy  $C_{1-4}$ -alkyl(alk)acrylate, N-vinyl lactam having 5-7 atoms in the lactam ring, styrene, derivatives of styrene having ring substituents selected from  $C_{1-4}$  alkyl groups and halogen atoms, polyhydroxyl (alk)acrylates, alkenes, butadiene, maleic anhydride and acrylonitrile.

47. (previously presented): A process according to claim 46 in which the diluent monomer is selected from hydroxy  $C_{1-4}$ -alkyl(alk)acrylates and polyhydroxyl(alk)acrylates.

48. (previously presented): A process according to claim 38 in which the said radical polymerisable monomers include at least 5% by weight zwitterionic monomer and at least 0.1% by weight monomer having a reactive group.

49. (previously presented): A process according to claim 38 in which the said radical polymerisable monomers include at least 5% by weight

zwitterionic monomer and 0.1% to 20% by weight monomer having a reactive group.

50. (previously presented): A polymer according to claim 46 in which the said radical zwitterionic monomers include at least 5% by weight, at least 0.1% by weight monomer having a reactive group and 5 to 20% by weight diluent monomer

51. (previously presented): A process according to claim 42 in which the said radical polymerisable monomers include at least 5% by weight zwitterionic monomer, at least 0.1% by weight monomer having a reactive group and 5 to 90% by weight of said comonomer.

52. (previously presented): A process according to claim 38 in which said cross-linkage is by direct reaction of groups  $Q^3$  with one another.

53. (previously presented): A process according to claim 38 in which said cross-linkage is by reaction of groups  $Q^3$  with a reactive bridging molecule.

54. (previously presented): A polymer according to claim 22 in which X is said group IVC.

55. (previously presented): A process according to claim 38 in which X is said group IVC.